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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,746	12/02/2003	Gopichandra Sumilla	202-1387 (FGT 3B6)	6817

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EXAMINER
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NGUYEN, TU MINH

ART UNIT	PAPER NUMBER
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3748

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/726,746

Applicant(s)

SURNILLA ET AL.

Examiner

Tu M. Nguyen

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22 is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |  |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20060208</u> | 6) <input type="checkbox"/> Other: ____  |

### **DETAILED ACTION**

1. An Applicant's Response to Restriction Requirement filed on May 19, 2006 has been entered. Claims 16-21 have been canceled. Overall, claims 1-5 and 22 are pending in this application.

#### ***Election/Restriction***

2. Applicant's election of the invention of the species of Figure 5 in the Applicant's Response to Restriction Requirement is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 1-5 and 22 are readable thereon and will be examined in their full merit.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freisinger et al. (6,729,120) in view of Sawada et al. (U.S. Patent 5,970,707).**

Art Unit: 3748

Re claim 1, as illustrated in the Figure, Freisinger et al. disclose a method for controlling engine operation in a vehicle, the engine coupled to an emission control device (catalytic converter), the method comprising:

- detecting a deceleration condition of the vehicle (step A1); and
- in response to the deceleration condition, having combustion in at least one cylinder, adjusting fuel injection into the engine to maintain an exhaust mixture air-fuel ratio entering the emission control device to be lean (step A2 with Yes answer and step of "No intervention in engine operation"), but less lean than a limit air-fuel ratio value, the limit air-fuel ratio value being a lean air-fuel ratio limit (step A2 with No answer, step A3 with Yes answer, step A4 with Yes answer, and step of "Switch off") determined as a function of exhaust temperature.

Freisinger et al., however, fail to disclose that the emission control device includes at least platinum particles.

As shown in Figure 1, Sawada et al. disclose an exhaust gas purification device for an engine, comprising a NOx trap (7). As indicated on line 45 of column 5 to line 26 of column 6, Sawada et al. teach that it is conventional in the art to include platinum particles in the NOx trap, wherein the platinum particles are necessary for the oxidation and reduction of NOx in an exhaust gas stream. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the NOx trap taught by Sawada et al. in the method of Freisinger et al., since the use thereof would have been routinely practiced by those with ordinary skill in the art to effectively remove harmful NOx emissions in the exhaust gas.

Re claim 3, in the modified method of Freisinger et al., the limit air-fuel ratio decreases as temperature increases, at least in one operating region.

Re claim 4, in the modified method of Freisinger et al., the exhaust temperature includes temperature of the emission control device.

Re claim 5, in the modified method of Freisinger et al., as taught by Sawada et al., the exhaust includes a second emission control device (5a) coupled upstream of the emission control device.

**5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Freisinger et al. in view of Sawada et al. as applied to claim 1 above, and further in view of Bolz et al. (U.S. Patent 6,510,685).**

The modified method of Freisinger et al. discloses the invention as cited above, however, fails to disclose that the method further comprises adjusting an exhaust valve in an exhaust system of the engine to increase exhaust gas cooling.

As depicted in Figures 1-3, Bolz et al. teach that during a coasting fuel shut-off situation (step 202 with ON answer), an exhaust valve in an exhaust system of the engine is adjusted (step 206) to increase exhaust gas cooling. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have utilized the adjustment of the exhaust valve as taught by Bolz et al. in the modified method of Freisinger et al., since the use thereof would have provided an effective means to control a temperature of the emission control device.

***Allowable Subject Matter***

**6. Claim 22 is allowed.**

*Response to Arguments*

7. Applicant's arguments with respect to the references applied in the previous Office Action have been fully considered but they are not persuasive.

In response to applicant's argument that Freisinger et al. fail to disclose or suggest a step that in response to a deceleration condition, adjusting fuel injection into the engine to maintain an exhaust mixture air-fuel ratio entering the emission control device to be lean, but less lean than a limit air-fuel ratio value, the limit air-fuel ratio value is a lean air-fuel ratio limit determined as a function of exhaust temperature (page 8 of an Applicant's Amendment filed on February 8, 2006), the examiner respectfully disagrees.

In Freisinger et al., as shown in the Figure, in response to a deceleration condition (step A1 with Yes answer), when a catalyst temperature is above a maximum allowable temperature T2 (step A2 with Yes answer), the catalyst is cooled down by allowing the engine to perform normally (step of "No intervention in engine operation"). The engine in Freisinger et al. is a spark ignition engine; and it is obvious to one with ordinary skill in the art that such engine is typically operated at a lean air-fuel ratio under a low load condition. The given lean air-fuel ratio is definitely less lean than that when the engine is under a "Switch Off" condition where fuel is cut-off to all cylinders. And as indicated in step A4, this "Switch Off" condition is based on an exhaust gas temperature. Therefore, Freisinger et al. clearly disclose or suggest the claimed limitations in dispute.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

***Prior Art***

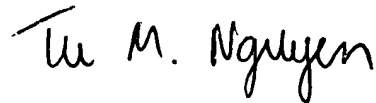
9. The IDS (PTO-1449) filed on February 8, 2006 has been considered. An initialized copy is attached hereto.

*Communication*

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



TMN

Tu M. Nguyen

August 6, 2006

Primary Examiner

Art Unit 3748